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STATE AND TRAIT ANXIETY IN THE STUDENT NAVAL AVIATOR WHO VOLUNTARILY WITHDRAWS FROM FLIGHT TRAINING

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The purpose of the present study was to determine whether student aviators who voluntarily drop out of the naval aviation training program (DOR's) respond differently to measures of state and trait anxiety from the way in which a group of entering aviation officer candidates (AOC's) and a group of male college students respond.

It was predicted that DOR's would be: 1) lower in A-State though higher in A-Trait when compared to entering AOC's; 2) similar in A-State and lower in A-Trait when compared to male college students.

The State-Trait Anxiety Inventory (STAI) was given to a group of 36 DOR's and 135 entering AOC's tested at the Naval Aerospace Medical Institute. Male undergraduates (N = 253) were tested at the Florida State University during a regular class period of their introductory psychology course.

The results indicate that DOR's are: (1) lower in A-State and similar in A-Trait when compared to entering AOC's; and (2) similar in A-State and lower in A-Trait when compared to the male college students.

Although significant differences between entering AOC's and DOR's were observed, the ultimate usefulness of the STAI in predicting DOR's must await further investigation.

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SUMMARY PAGE

THE PROBLEM

The purpose of the present study was to determine whether student aviators who voluntarily drop out of the naval aviation training program (DOR's) respond differently to measures of state and trait anxiety from the way in which a group of entering aviation officer candidates (AOC's) and a group of male college students respond.

It was predicted that DOR's would be: 1) lower in A-State though higher in A-Trait when compared to entering AOC's; 2) similar in A-State and lower in A-Trait when compared to male college students.

The State-Trait Anxiety Inventory (STAI) was given to a group of 36 DOR's and 134 entering AOC's tested at the Naval Aerospace Medical Institute. Male undergraduates (N = 253) were tested at the Florida State University during a regular class period of their introductory psychology course.

FINDINGS

The results indicate that DOR's are: 1) lower in A-State and similar in A-Trait when compared to entering AOC's; and 2) similar in A-State and lower in A-Trait when compared to the male college students.

Although significant differences between entering AOC's and DOR's were observed, the ultimate usefulness of the STAI in predicting DOR's must await further investigation.

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INTRODUCTION

Psychological tests for differentiating between the incoming aviation officer candidate (AOC) and AOC's who voluntarily drop out of the training program (DOR's) have generally been quite unsuccessful (4,5). Green (4) gave tests of ego-strength, anxiety, introversion-extraversion, and attitude toward quitting to incoming AOC's, DOR's, and student pilots who had completed approximately one year of their training and found that most of the tests were unable to discriminate between the AOC and DOR groups; DOR's, however, were somewhat more anxious on the Maudsley Personality Inventory than the AOC's. Peterson, Lane, and Kennedy (5) failed to find any differences between the AOC's and DOR's on the Edwards Personal Preference Schedule (EPPS). Numerous other studies (3,7,8) have failed to obtain significant differences between these groups.

In a recent study, Bucky (1) hypothesized that the inability of psychometric tests to discriminate between the average incoming AOC tested during indoctrination and the DOR tested after he had dropped from the program may be due to the fact that both groups consist of male college graduates approximately 21 years of age, with high average intelligence, all carefully selected for a rigorous training program. In addition to being homogeneous with regard to age, educational background, and mental and physical ability, AOC's and DOR's have had considerable experience in taking tests. They know what to expect, tend to be somewhat defensive, and frequently give socially acceptable responses to test questions rather than answering them as they truly feel.

In order to study test taking attitudes, Bucky (1) gave the California Psychological Inventory (CPI) to a group of AOC's and DOR's with instructions to answer "as honestly as you can." Another group of AOC's and DOR's were given the same test, but with instructions to respond "as you would like to be." The results indicated that with the normal administration of the test, only two of eighteen scales discriminated between the two groups (statistically, this was only slightly better than chance). For the "ideal" administration of the test, however, differences on eleven of the eighteen scales were statistically significant. The findings were interpreted by the author as suggesting two things: 1) Psychometric tests given to these homogeneous groups of subjects with standard instructions produce results that do not discriminate between the AOC and DOR because these subjects are defensive in taking tests and generally approach them with an attitude of looking good; 2) disrupting their customary attitudes for taking tests by changing their "set" may better enable psychometric tests to distinguish between the two groups.

Bucky, Spielberger, and Bale (2) hypothesized that anxiety influences both the test-taking attitudes of AOC's and their performance as student pilots. They gave a group of AOC's the State-Trait Anxiety Inventory (STAI) (6) with standard instructions and then with instructions to answer "as if you had just landed on an aircraft carrier." The results when compared to male college students indicated that: 1) AOC's were generally less anxious (lower in A-Trait) than college students; 2) AOC's were more anxious in their present situation (higher in A-State) than college students; and 3) with the "carrier" instructions, AOC's reported they would be significantly less anxious (lower in A-State)

and described themselves as generally lower in A-Trait than during the initial administration of the test. No differences in A-Trait scores were expected in the Bucky et al. study (2) since measures of a personality trait theoretically should not vary as a function of a particular situation. It was expected, however, that A-State would increase markedly in anticipation of landing on the aircraft carrier because this experience is generally seen as the most anxiety producing, dangerous part of pilot training. The results, therefore, were seen as providing further evidence that AOC's are defensive in test-taking situations and unwilling to admit to anything that might jeopardize their future as naval aviators. The defensive attitude in the Bucky et al. study (2), as well as Bucky's findings with the CPI (1), led the authors to hypothesize that the STAI may be helpful in discriminating between the AOC and DOR.

The primary goal of the present study was to compare the state and trait scores of DOR's with those of the AOC's who remain in the naval aviation training program. A secondary goal was to compare the anxiety scores of DOR's and AOC's with those of male college students. The following predictions were made: 1) The DOR's would obtain lower A-State scores than AOC's because they were no longer being subjected to the stresses associated with the flight program. 2) A-State scores of the DOR's would not differ from those of male college students since they would be under no greater stress than would be the case for most college students. 3) The DOR's and AOC's would have lower A-Trait scores than college students since previous research has suggested that men in flight training programs are a highly selected group of individuals who are relatively low in A-Trait. 4) The A-Trait scores of DOR's would be higher than those of AOC's who might respond more defensively to the A-Trait scale.

PROCEDURE

SUBJECTS

The subjects included 36 DOR's who had dropped out of the flight program and a group of 135 entering AOC's. The DOR's were tested within 7 days of the time they dropped out of flight training. The AOC's were tested during their routine entrance physical examination at the Naval Aerospace Medical Institute. It should be noted that all of the DOR's started in the flight program as AOC's. In addition, previous attrition data indicate that 20 per cent of the AOC group will eventually DOR. There were 253 undergraduate men at Florida State University who were tested during a regular class period of their introductory psychology class.

ANXIETY MEASURE

The State-Trait Anxiety Inventory (STAI) is a self-report scale that consists of 40 statements. The A-Trait scale consists of 20 statements that require the subject to describe how he generally feels. The A-State scale also consists of 20 items, but the instructions require the subject to indicate how he feels at a particular moment in time. The A-State scale has been shown to increase in situations that are characterized by either physical danger or psychological stress, and decrease as a function of relaxation

training. The A-Trait measure is relatively impervious to the amount of stress that is associated with a particular situation (6).

RESULTS AND DISCUSSION

The results in Table I indicate that DOR's obtained significantly lower A-State scores ($t = 4.55$; $P < .01$) though similar A-Trait scores when compared to the AOC group. DOR's obtained almost identical A-State scores but significantly lower A-Trait scores ($t = 2.78$; $P < .01$) than the male college students.

Table I

Means and Standard Deviations of A-State and A-Trait Scores

Subjects		A-State	A-Trait
AOC's (N=135)	$\bar{x}$	47.19	34.39
	sd	12.54	9.06
DOR's (N=36)	$\bar{x}$	37.00	32.97
	sd	8.32	7.56
College Students (N=253)	$\bar{x}$	36.35	37.68
	sd	9.67	9.69

The present findings, in general, are consistent with the predictions described above. The DOR's were less anxious in their present situation than AOC's and obtained A-State scores similar to those of male college students. Having dropped out of the rigorous flight training program presumably removed them from the very real threat with which all flight students must cope.

Lower A-Trait scores were expected for the DOR's and AOC's because males entering the flight program are highly selected with regard to being relatively low in anxiety proneness. Therefore, it is not too surprising that those entering the flight program are lower in A-Trait than the average college student. The one finding that might be reviewed as inconsistent with expectations is that the DOR and AOC obtained similar A-Trait scores. That is, all subjects responded to various stress situations with a similar level of anxiety. It was predicted that the AOC would be more defensive in admitting to trait anxiety.

Although the results of the present study indicate that the DOR's possess less A-State than the average AOC, these findings provide little evidence that the STAI will be able to predict potential DOR's. Clearly, the DOR is in a different state of mind from the AOC; his A-State score may merely reflect this difference. On the other hand, the

results of the study do not contraindicate the potential usefulness of the STAI. It is certainly conceivable that before the DOR actually drops out of the program (when he is still an entering AOC), he may respond differently to the STAI (e.g., may be higher in A-State) from the student who ultimately completes the program.

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